

7/28/2016

Technical Comments

Final Streamlined Copper Water-Effect Ratio Study Report Two Bayou Creek, Arkansas

These comments are being provided to the Arkansas Department of Environmental Quality (ADEQ) in response to the document titled *Streamlined Copper Water-Effect Ratio Study Report*. This study was intended to support modification of Arkansas water quality standards by establishing a site-specific criteria for copper in Two Bayou Creek.

General Comment

1. After reviewing the past comments submitted by the Environmental Protection Agency (EPA) to ADEQ on the draft report and reviewing the final report, it appears that Shumaker Public Service Corporation responded to all of EPA's comments. The additional comments below raise some additional concerns noted after the review of the final report given that the WER now applies to a new permit with new conditions. The comments also note some typographical errors in the final version of the report.

Section 4 – Results

Effluent Chemical Parameters

2. In the third paragraph of this section, found in the middle of pg. 11, it states

“The calculated load of total copper in the sample collected from the effluent was 0.08 lb/day which is within the range of the minimum and maximum daily maximum total recoverable copper load of 0.001 lb/day and 0.3 lb/day and less than the long term average load of 0.04 lb/day.”

This sentence needs to be revised to reflect that .08 lb/day is not less than .04 lb/day. This error appears to be due to the revision of the concentration of the total copper load in the effluent, which was previously reported as the dissolved copper load at 0.03 lb/day.

Biomonitoring Test and WER

3. In the first paragraph of this section, at the top of pg. 12, it appears that the hardness values for the site water and for the laboratory water are reversed.

4. As previously noted by ADEQ, in the calculation of the WER with equation (4-2), at the top of page 13, there is a typo in the second line. Currently it says “= 262,28 µg/L / 22.1 µg/l”; this should be “= 262.48 µg/L / 22.11 µg/L.”

Additional Comments

5. Further explanation of some parameter concentrations measured in the simulated downstream water (SDW) would be helpful. The TSS in the SDW was 8 mg/L even though in the effluent it was 4 mg/L or 5.6 mg/L, depending on who measured the TSS, and it was less than 4 mg/L in the upstream water. This may be due to natural variation that occurs when measuring TSS, but it would be useful to include a discussion of whether this is in the reasonable level of variation expected with this test. In addition, a higher level of dissolved copper was also found in the SDW compared to the effluent and upstream water. The upstream water had a dissolved copper concentration of 1.5 µg/L and the effluent had a dissolved copper concentration of 6.5 µg/L, while the SDW had a dissolved copper concentration of 8.5 µg/L. Including a discussion of how the dissolved copper concentration and the TSS concentration in the SDW could be greater than the concentrations of the two input waters would be useful.

6. Please specify during what time of year the WER going to be applied. In the 2015 permit it specifies two different critical dilutions, a critical dilution of 92% from November to April and then a critical dilution of 100% from May to October. Since the WER wasn't determined with 100% effluent, it may not be an appropriate number for May to October.